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EDITORIAL NOTES

GEORGE HERBERT LOCKE

THE National Herbart Society has been reorganized and called the National Society for the Scientific Study of Education. With the customary business methods which characterized it in its early days it has issued an outline for discussion at the meeting of the Department of Superintendence. Mr. David Eugene Smith, of the State Normal School, Brockport, N. Y., presents an interesting outline on the "Teaching of Elementary Algebra," and Colonel Parker, of the Chicago Institute, has an elaborate presentation on "Principles of Correlation." There are enough general statements in this presentation to afford an excellent opportunity for discussion, and the meeting ought to be lively and interesting.

NOW THAT there is a federated Australia known as the Commonwealth of Australia there is a strong movement among those interested in higher education to found a great federated university where the young bachelor of arts, science, medicine, or law from the Universities of Melbourne, Sydney, Perth, Adelaide, and Hobart might go for graduate work. By this plan much weight might be lifted from these existing institutions, their work would in a great measure be simplified and there would be at once a university for graduate work, which as the University of Australia would take rank with the great universities of the world. This seems an opportune time for such a project and it is likely that the university will be established in or near the new capital of the commonwealth.

THE elective system at Yale University was greatly extended at the recent meeting of the corporation. The range of choice in the sophomore year will be further broadened by the addition of courses in mental and moral sciences, so that a sophomore will make his choice from among these nine other courses in ancient languages, modern languages, English, mathematics, chemistry, physics, and history. A new rule will be formulated to guide the students in making an advantageous selection of studies. All the important studies are grouped under three heads: (1) language and literature; (2) mathematics and the natural sciences; (3) mental, historical, and political sciences. Each student will hereafter be required to take connected courses in one of these departments during three years, and connected courses in each of the other two departments during two years. This will involve the grading of courses and will require every student to attain to a high standard in one line of study and to a less high standard in the other

two lines. There will be then a major and two minor lines of study for each student. A further important change in the administration of the curriculum is made by abolishing all "conditions." Hereafter a student must complete sixty hours of work in the class room during one year. If he fails in any course he will not be credited with the corresponding number of hours and can make up the deficiency only by choosing that number of additional hours in the following year. A well prepared student will under certain circumstances be able to attain his bachelor's degree in three years.

WE quoted in our October number from the very suggestive address of Professor Coulter, of the University of Chicago, on the "Mission of Science in Education." In a recent number of the London *Journal of Education* there is the report of an address by Mr. Henry E. Armstrong, F.R.S., on the same subject, but with special reference to the neglect of science in the secondary schools of England. The following extracts will show his position and the recommendations he urges upon the headmasters.

We gibe at the intense conservatism of the Boers, but the beam in our own eye is unnoticed, for we forget, or cannot realize, how absolutely similar our condition is to theirs, and that, taking our opportunities into account, we are far ahead of all other nations in our disregard of the teachings of experience. It has been stated that the Boer has seen his country developed against his will and without his collaboration; but our country is being developed, if not against the will of our schools, at all events without their direct and thorough collaboration, in so far as the applications of science are concerned.

It behooves us, then, to inquire wherein our methods are faulty—what are to be regarded as sound methods—and, in doing so, it will be well to take illustrations from current events. If we consider the part played by that magnificent soldier Baden-Powell in South Africa, the reputation he has achieved, and think how his success is to be explained, what must we conclude? Quite simply that he is a master of scientific method; in other words, gifted with common sense and with the faculty of using it. It is easy to fathom his methods, as he has fully displayed them in his shilling manual, *Aids to Scouting*, which every teacher should possess and study as being one of the few books dealing with the "practical arts" which will be worth preserving when text-books generally are destroyed by edict.

According to Baden-Powell, "the main key to success in scouting is to have pluck, discretion, and self-reliance." Surely these qualities are the key to success in everything! Pluck, he tells us, in its highest form—viz., that of the unassisted individual—is very much the result of a man's confidence in himself. And confidence in yourself you can only have, he adds, when you know that, by training and practice, you are thoroughly up in the work that you have to do. Self-reliance he defines as the ability to act "on your own hook"—to be able to see what is the right line to take, according to circumstances, without wanting someone at your elbow to tell you exactly what to do.

Of course, all will agree with this; but can we assert that we in any way train boys and girls *in school* to exhibit such pluck, discretion, and self-reliance? I venture to say that we cannot. Instead of being self-reliant, discreet, and full of intellectual pluck, our modern boys and girls are made absolutely dependent on their teachers

and on text-books; they have scarcely an idea of their own except on topics which have not been touched upon *in school*, and they have no healthy desire to increase their intelligence.

Baden-Powell's book is full of good advice which is applicable to ordinary training. Take, for example, his instructions on reporting: "Only report facts, not fancies. That is to say, in describing, say, a river, don't call it a 'large river'—that may mean anything—but give its apparent width and depth in yards and feet as nearly as you can judge. Similarly, 'a large body of the enemy' conveys no meaning—it might mean a squadron or it might mean a division." Nothing could be more admirable than this direction to report facts, not fancies. It is what we insist on in all scientific work; it is what is required in the world by all employers who rely on their assistants for information; but the art is one which is never learned at school.

The main object of introducing science into schools, however, *must be* to develop character on its practical side, with the purpose of teaching our youth to scout in the world—to use their eyes, to draw correct inferences, to be guided by what they see, and to help themselves. From this point of view the study of method is alone of importance; it stands to reason, however, that in studying and acquiring a useful knowledge of method, a knowledge of facts is necessarily also required.

But a revolution must be effected in our schools if scientific method is to be taught in them. I have no hesitation in saying that at the present day the so-called science taught in most schools, and especially that which is demanded by examiners, is not only worthless, but positively detrimental. All who are acquainted with the facts know this to be the case; and if we ask ourselves the simple question—whether what is done tends to develop the wits, to develop the power of self-help—we must all admit the very opposite to be the case. Schools, in fact, are engaged in fashioning our youth to require leaning posts, not in training them to act on their own account; examinations have made self-help impossible. No employer, go where you will, is satisfied with the product the schools turn out.

Speaking to headmasters, I would say that on them mainly rests the heavy burden of *demanding* a reform, as they are, in a measure responsible for having allowed an altogether improper condition of things to grow up. I recently ventured to remark, in a discussion at one of the educational conferences held at the beginning of the year at the Imperial Institute, that "headmasters suffer us, but do not love us." They have, in fact, admitted the science teacher into their schools because they saw that he was getting into fashion; but they have had no sympathy with his work, and, having made no attempt to understand his methods—have, unfortunately, allowed him, within the time at his disposal, to do pretty much as he pleased. Having never received any pedagogic training, he naturally follows the example set him by his teachers; he proceeds to teach on professional lines, as though the boys under him were going to be chemists or physicists, and it never occurs to them that education and professional training are two very different things.

The situation is made worse by the fact that our system of professional training is thoroughly bad, no proper attempt being made to infuse feeling into it nor to impart a knowledge of true scientific method. The difficulty has arisen because few teachers give any thought to method. Most teachers, therefore have never been taught to think broadly; they have no desire to scout, even within their own proper domain; the spirit of research has never entered into their lives, consequently they are almost powerless to act alone, and incapable of originating.

There is but one way of effecting the necessary changes, and that is to reform the universities whence the supply of teachers is derived. Directly or indirectly they govern everything. This could be done within a generation if headmasters would but agree to make the demand — by the universities requiring proper proof of some appreciation of scientific method to be given by all candidates for admission, which would make it necessary for all schools to give proper training in scientific method; and by their insisting that the spirit of research shall dominate the whole course of training. The theory at the universities at present is that a man must be well read — that he must know all that other people have done — before he even thinks of doing anything himself. Only graduates are allowed to scout — to do research work; consequently the majority escape without any taint of *acquired* intelligence, and those who undertake research work as a postgraduate exercise are frightfully hampered by a burden of knowledge much of which is useless, because the power of using it has never been inculcated and self-reliance has never been taught.

While making these demands of the universities, the schools must be prepared to make great changes. Far less attention must be paid to books and to set lessons; far more attention must be given to practical studies conducive to the formation of habits of self-reliance. Boys and girls must learn to think and act for themselves, to utilize the knowledge they have, and to know how to increase their knowledge. To this end they must be taught “to think in shape,” as Thring puts it; to work with the tangible.

There is much for reflection in these statements of Mr. Armstrong, for in very many of our secondary schools there is unfortunately very much the same state of affairs as he condemns so unsparingly in the schools of England.

It is with a good deal of satisfaction that we notice the action of the graduate council of the faculty of the University of California in relation to the necessity for a higher course of professional studies for teachers. The chairman of the council appointed a committee consisting of Professors E. B. Clapp, W. E. Ritter, J. H. Senger, Bernard Moses, and Elmer E. Brown to draw up a course of professional studies for candidates for the Master's degree who are desirous of making special preparation for some of the higher positions in the profession of teaching. They were also to propose a form of recommendation to be granted to the holders of the Master's degree who have completed this professional course. This is what is known as the higher recommendation for the teacher's certificate. The following is the report of the committee which has been submitted to the academic senate:

We would recommend that the following paragraphs be added to the joint regulations of the faculties concerning graduate students:

The respective faculties will issue to qualified holders of the Master's degree of this university a higher recommendation for the teacher's certificate. Candidates for such higher recommendation must satisfy either the one or the other of the following schedules of requirements:

Schedule A.—Intended especially for those preparing to become teachers in normal schools, or principals or superintendents of public schools.

1. The ordinary requirements for the Master's degree. But if the subject or subjects on which such degree is based be chosen from one department alone, there shall

be added six units of work in some other department, in courses classed either as "primarily for graduates" or as "for graduates or advanced undergraduates." Suitable courses taken in the undergraduate status may count toward the satisfaction of this requirement of additional work. The candidate must present a satisfactory thesis on some subject in education.

2. The completion of eighteen units of work in philosophy, including studies in formal logic, general psychology, and the history of philosophy, and either ethics or experimental psychology, or both. This requirement may be satisfied by work done in the undergraduate status.

3. The completion of either (a) twenty units of work in history and political science, including studies in local government and administration, or (b) twenty units of work in biology, including studies in the underlying principles of animal life and evolution, and in human physiology. This requirement may be satisfied by work done in the undergraduate status. Courses offered in satisfaction of requirement 1 cannot be counted toward the satisfaction of this requirement.

4. (a) The completion of twelve units of work in the department of education, in courses either "primarily for graduates" or "for graduates or advanced undergraduates," including studies in the history and general theory of education, and (b) the completion of twelve units of work in the department of education, in courses "primarily for graduates," including studies directed toward the special line of educational service which the candidate has in view.

Requirement 4 (a) may be satisfied by work done in the undergraduate status. Requirement 4 (b) may be satisfied by work done under requirement 1. Only work of superior merit may be presented in satisfaction of requirements 1 to 4 inclusive. The meeting of these requirements will ordinarily call for more than one year of work in the graduate status.

5. Superior attainments in the practice of teaching. This requirement will ordinarily be met by teaching with marked success for a period of at least two years after the other requirements have been satisfied, or between the beginning and the completion of the graduate work offered in satisfaction of those requirements; and the superior merit of such teaching must ordinarily be attested by at least one representative of the department of education and two representatives of other departments of this university.

Schedule B.—Intended especially for those preparing to become department teachers in secondary schools.

1. The ordinary requirements for the Master's degree. But if the subject or subjects on which such degree is based be chosen from one department alone, there shall be added six units of work in some other department, in courses either "primarily for graduates" or "for graduates or advanced undergraduates;" and if such work be based on subjects chosen from two departments, there shall be added six units of work in either or both of those subjects, in courses either "primarily for graduates" or "for graduates and advanced undergraduates." Suitable courses taken in the undergraduate status may count toward the satisfaction of this requirement of additional work. The candidate must present a satisfactory thesis in the principal subject that he is preparing to teach.

2. The completion of ten units of work in philosophy, including studies in logic, psychology, and the history of philosophy, or in any one or two of these

subjects which may be elected under the regulations of the department of philosophy. This requirement may be satisfied by work done in the undergraduate status.

3. The completion of either (*a*) twenty units of work in history and political science, including studies in local government and administration, or (*b*) twenty units of work in biology, including studies in the underlying principles of animal life and evolution and in human physiology, or (*c*) twenty units of work in some other subject closely allied to the principal subject that the candidate is preparing to teach. This requirement may be satisfied by work done in the undergraduate status. Courses offered in satisfaction of requirement 1 cannot be counted toward the satisfaction of this requirement.

4. (*a*) The completion of twelve units of work in the department of education, four units of which must be taken in an approved course or courses "primarily for graduates," and (*b*) the completion of three units of work either in the department of education or in a pedagogical course in some other department.

Requirement 4 (*a*), with the exception of the four units noted above, and requirement 4 (*b*), in the absence of departmental regulations to the contrary, may be satisfied by work done in the undergraduate status. Only work of superior merit may be presented in satisfaction of requirements 1 to 4 inclusive. The meeting of these requirements will ordinarily call for more than one year of work in the graduate status.

5. Superior attainments in the practice of teaching. This requirement will ordinarily be met by teaching with marked success for a period of at least two years after the other requirements have been satisfied, or between the beginning and the completion of the graduate work offered in satisfaction of those requirements; and the superior merit of such teaching must ordinarily be attested by at least one representative of the department of education of this university and two representatives of other departments.

The candidate, under either of the above schedules, must give satisfactory evidence of good attainments in English, especially in oral and written expression, and of ability to read either French or German. Any reasonable doubt as to the moral character of the candidate will prevent the issuance of the recommendation.

The work offered in satisfaction of requirements 1 to 4 inclusive in either schedule is subject to the ordinary rules as to university residence; but the graduate council may, in the case of any candidate, require that any portion or all of the graduate work offered in satisfaction of these requirements be taken in residence.

Every graduate student who is a candidate for the higher teacher's recommendation must file with the recorder, at least three calendar months before the time proposed for the completion of the work offered in satisfaction of requirements 1 to 4 inclusive, a detailed schedule of studies on which such candidacy is based. This schedule must bear the approval of the Committee on Teachers' Certificates.

This is a great step forward in connection with higher professional training, and certainly this action of the University of California will help very materially those other states and colleges which are feeling the need of just such definite requirements.